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Journal of the Society of Arts.

FRIDAY, AUGUST 7, 1863.

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SOCIETY'S MEMORIAL OF THE PRINCE CONSORT.

NOTICE TO MEMBERS.

In accordance with the Report adopted at the General Meeting held on the 17th ult., additional subscriptions for carrying out the Society's Memorial of His Royal Highness the Prince Consort are invited. Any member desiring to subscribe, or to increase the amount of his subscription, is requested to send a Cheque or Post-office Order, made payable to Mr. Samuel Thomas Davenport, the Financial Officer.

PRESERVATION OF IRON-PLATED AND OTHER SHIPS.

A process has been invented by Monsieur Jean Pierre Jouvin, Chief Medical Officer of the French Navy, and Professor of Chemistry to the Naval School of Medicine at Rochefort, "For Preserving Iron-plated and other Vessels and Metallic Articles from Oxidation, and Preventing Ships' Bottoms from Fouling." The French Government are now making trial of the process by covering two iron-clad vessels with the preparation.

The invention has been patented in England, and consists (as described by the inventor) in lining the inner surface of ships' sides and bottoms, perfectly scoured, with sheets or lamina of zinc applied directly against the sheet-iron, and there held fast between the latter and the frames. But as iron ships now afloat present some difficulty to the application of such zinc sheathing in the interior of their holds, the internal sides of the hold are first carefully scoured, and afterwards a double coat of a paint made of powdered metallic zinc is applied thereon, which is spread all over from the keel up to a little above the water line. As zinc paint, on account of the fatty matter it contains, does not act as an electric protector with the same efficiency as zinc when employed in the form of sheets, it is necessary to increase the area of the protecting surface.

For iron ships on the stocks, as soon as the keel, the stem, the stern-post, and frame are set up, they receive a thick layer of the aforesaid metallic zinc paint. The boarding of the keel and sides is afterwards proceeded with as usual, care being taken to apply underneath the timber employed a coat of the same paint, or in lieu thereof sheets of greasy felt thickly sprinkled with powdered metallic zinc. The zinc sheets are then applied without difficulty, and become bound with the sheets of iron of the streaks from the keel up to the water-line, and from the stem up to the stern-post, so as to form part with them. The sheets of zinc are held between the sheets of iron which form the stem and the keel, and, assuming the shape of the sheets to be protected form continuous bands extending right and left and from the bottom upwards, so as to meet again and join each other, between the sheet-iron forming the stern-post, and to have their ends in the vicinity of the helm and the water-line. As the rivetting takes place at a temperature higher than that of the melting of zinc, and approaching that at which this metal evaporates, part of the sheets around the heads of the rivets would be destroyed; to avoid this defect, the sheets of zinc must be of a sufficient breadth and length to cover the sheet-iron to within one-third of an inch of the rivets, without reaching them. The phenomena of dilatation could, therefore, freely take place on the preserving plates, the co-efficient of expansibility of these plates being nearly double that of iron.

For those parts of the zinc plates held between the frames and the sheet-iron, in order to insure a complete rivetting of iron on iron, it is necessary to begin by cutting washers or discs, by the ordinary means, in these bands opposite each hole of the rivets. The diameter of these washers must be double that of the rivets, and they are finally replaced by rings of sheet-iron, the diameter and thickness being equal to that of the bands of zinc. The covering bands and the heads of the rivets must receive a thick coat of metallic zinc paint. In the electro chemical scale, the protecting metal (zinc) coming immediately after the protected metal (iron), it will be advantageous to have the protecting surface as nearly as possible of the same dimensions as those of the surface to be protected. It is found that the protecting bands of zinc, if properly fixed from the keel up to the water line, may be only about two-thirds at maximum, and about one-tenth at minimum of the last surface, provided all the spaces between the zinc bands be covered with the metallic zinc paint. The zinc sheets should measure about one-fourteenth of an inch in thickness for the lower part, and about one-twenty-eighth of an inch for the sides of the hold. When the ship is built, all the parts of iron composing the hold—such as the ribs, keelsons, clamps, transversal bulk-heads, and others not covered by the zinc bands, are carefully scoured, brushed, or otherwise cleaned, and then coated with metallic zinc paint.

To protect the exterior part of the hull immersed from the deposit of marine sheets and plants, the inventor proceeds as follows: He states that turbith mineral ($SO^3\ 3HgO$) mixed with Prussian blue ($3Fe\ Cy + 2Fe^2\ Cy^3$) produces by its contact with the alkaline chlorides of sea-water, one of the most violent poisons known to mineral chemistry, namely—the cyanide of mercury ($Hy\ Cy$) in the shape of chloro-cyanide of mercury and sodium. He therefore first mixes fifty-five parts of turbith mineral with forty-five parts of Prussian blue of the commonest tint, but not adulterated, so as to obtain a green powder perfectly homogeneous, and composes the poisonous paint as follows:—Of boiled linseed oil, 250 parts; red lead (or any other agent which may cover or adhere as well or better than red lead), which is here used as a mere vehicle for the poisonous compound, 650 to 660 parts; the hereinbefore described mixture, 90 to 100 parts. These substances must be well ground together in order to effect an uniform and complete distribution of the poisonous compound throughout the mass of the paint. But as iron possesses the property of reducing mercurial and leaden compounds, this preparation must not be applied direct on the bare metal, all the parts of the hull, namely, the sheet-iron of the keel, cut-water, rudder, paddle-wheel frames, and every part of iron to be immersed or wetted, must be previously coated with two layers of the metallic zinc paint, after being scoured as completely as possible. When these layers of metallic zinc paint are quite dry, the poisonous compound or paint is applied thereon. This poisonous compound may prove also very advantageous if applied to wood employed to secure dikes, embankments, and for marine constructions to protect them from injury by teredos. The smallest particle of the chloro-cyanide of mercury and sodium produced by its contact with sea salt, suffices to kill instantaneously animalculæ, plants, and even their germs when brought within its influence.

To apply the invention to iron-plated vessels, there must either be placed between the woodwork of the hull and each iron plate a sheet of zinc, the surface of which is rather smaller than that of the iron plate, or this woodwork must be first coated with a thick layer of metallic zinc paint; then each iron plate, previously well scoured, is similarly painted on its inner face, and adapted to the sides of the ship. The ship being finished, the whole of her bottom to be immersed in water is treated in the manner before described, that is to say, first coated with a double layer of metallic zinc paint, and afterwards with the poisonous compound paint. To preserve sheet iron tanks, marine boilers, steam engines, and other similar articles from oxydation, the inventor either applies on them externally zinc sheets, or coats them with a double layer of the afore-mentioned metallic zinc paint.

To preserve the parts of cables and chains stored in wells, where they are oxydised very rapidly, a band of zinc is fastened by screws on each of the rings or links. The metallic zinc paint may be applied to iron articles in general, wherever red paint is now made use of, and as a substitute for it. For ships' bottoms with a copper sheathing, before the sheathing is applied the woodwork is coated over with a thick layer of metallic zinc paint. But in the present case it is more economical to employ powdered cast iron, or, in preference, iron powder, instead of zinc powder, to prepare the metallic protecting paint, as it will protect copper as effectually. Should it be found, however, that the copper sheathing gets foul with barnacles and sea weeds, it must be coated with the poisonous compound before mentioned.

NATIONAL MUSEUM OF ARCHITECTURE.

The following is a report from the Council of the Architectural Museum to the Department of Science and Art, on the formation of a National Museum of Architecture:—

The Council of the Architectural Museum begs, in compliance with the intimation conveyed by the Committee of Council on Education, of the date of December 11, 1862, to submit the following considerations on the formation of a National Museum of Architecture in London. In doing so the Council feels itself absolved from the necessity of proving the desirability of such a Museum. The only questions about which there can be any difference are those which concern the details of a measure which in itself meets with universal approbation.

I. The first point which must be settled is the nature of the museum. All museums may be divided into two classes, which, for want of better terms, may be called exhibitional and scholastic. An exhibitional museum is one of which the primary use is the display of a collection or collections in given branches of art and science, brought together with a view to the completeness of the collections in themselves, and not for the purpose of direct instruction. Valuable, or rather indispensable, as such museums are for the purpose of study, yet their scholastic use is a secondary and not a direct one. They exist, indeed, for the student to profit by, on his own responsibility, but they were brought together for the sake, so to speak, of their contents, rather than for that of the visitor. The British Museum and the National Gallery are instances of exhibitional museums.

A scholastic museum, on the other hand, is one which has been constituted for the scholar; and the selection of specimens is made with a view to his direct instruction, rather than to the completeness of the objective display. The staple of an exhibitional museum must always consist of original objects; a scholastic museum admits of, or rather invites, models, diagrams, and *fac-similes.*

The Council of the Architectural Museum is convinced that the National Museum of Architecture must be mainly scholastic. Within what limits it would be desirable to make it also exhibitional will be noticed farther on in the report. It must at the same time be noted, that while the museum will profitably stand open to the studies of the architect who is engaged in the elaboration of his details, it will be still more useful to, and more frequently used by, the architectural artist, whether he is composing for himself, or merely carrying out the working drawings which have been placed in his hands. It will, as far as its more conspicuous contents are concerned, rather be a museum of architectural art, than absolutely one of architecture.

II. The next consideration is that of the limit of the collection, both as regards the sweep of subjects to be included under the definition architecture, and as regards the various styles of constructive art which it is desirable to illustrate.

While it is very easy to define what is painting, and not perhaps very difficult to attain a proximate definition of sculpture, the limits of that wide field which architecture may be said to fill to the exclusion of cognate arts, are almost undecipherable. The difficulty of attaining a right understanding on this head, in regard to a National Musuem of Architecture, is increased by the consideration which the Council ventures to assume as axiomatic, that the collection must rather be one of the details than of large proportions of buildings, and that those details must be selected for the beauty of the architectural art which they display. In other words, a National Museum of Architecture must, to a great extent, be a sculpture gallery. It is useless to attempt to evade this truth. If it is admitted, the question passes from abstract to practical considerations, and it becomes one of expediency. It is accordingly submitted, that the Museum of Architecture, properly speaking, should, on grounds of expediency, stop short of objects of which, from their moderate size and portability, fine original specimens can and may be displayed elsewhere in London in exhibitional museums, or which from their peculiar contexture ill admit of being copied. The first head excludes portable furniture; triptych pictures, small articles of metal work, ivories, textile fabrics, and, partially, ceramics.

III. It follows from the premises already recited that the contents of the museum should rather be whole-size casts of peculiarly meritorious specimens of architectural ornamentation, than reduced models of entire buildings, or of large portions of buildings. The Council does not of course mean to say that models should be excluded. They have their own great and distinctive value in connection with the casts as keys to the relevancy and position of the details exhibited at large, as well as for the amount of direct teaching which they may convey as to the general character and proportions of the buildings which they pourtray. Still the position of models (unless they are made on a large scale and with the most extreme accuracy) in the cycle of systematic and direct architectural teaching, must always be somewhat subordinate; their distinctive and especial value is as guides to the architect and the employer during the actual process of construction. It is needless to observe that such models as the one which Wren prepared of his first sketch for St. Paul's, now at South Kensington, have an historical value in themselves which removes them from the merely practical considerations which have just been urged.

Happily, modern science has intervened to provide completely and inexpensively the needful compliment to the collected whole-sized casts, by the discovery of topography. It is impossible for an architectural museum to have too many photographs. Cheap and comprehensive as they are, they are always worth collecting, and any fastidiousness as to their acquisition would be misplaced. Plans and measured drawings are also of great value, and no museum of architecture would be complete without its ample store of them.

As to the objects which may appear in the form of plaster casts, all ornamentation in stone (whether sculpturesque or not) is admissible, including such statues as are introduced as parts of architectural composition. So are the casts of such specimen woodwork as, in modern parlance, would be termed fixtures—such as panelling, church stalls, &c., and to a certain extent those which reproduce the details of important articles of portable furniture. Similar discriminative principles will decide what objects of metal-work do, and what do not, admit of being cast for the purposes of the museum.

The above suggestions lead up to the direct question of what should be the styles of architecture admissible at the museum. The answer appears to be that all nations and ages should be represented which possessed an architecture based on scientific or artistic principles, but that the largest portion of the museum should consist of examples of the styles which have, generally speaking, been reproduced in modern architecture. These styles briefly recapitulated are the Greek, the Roman, the Romanesque, the Pointed, and the various forms of Renaissance. An architectural museum, confined to any one of these styles would be, as far as it went, valuable; a national collection must represent all if it is intended to be complete, while the limitations which have been offered as to the selection of examples are equally applicable to all the styles, should the museum, or should it not comprise specimens of contemporaneous architectural ornamentation. The truth appears to be that, speaking abstractedly, contemporaneous architecture must be admitted if the collection is to be accepted by future generations as an adequate exponent of architectural history. But the difficulty of selection is the obstacle, for a crowd of mediocrities admitted through favour or fashion would be a misfortune to art. On the whole, it is best to say generally that contemporaneous architecture is admissible, and at the same time to throw the responsibility of selection upon the managers of the museum. As to the admission, however, of photographs of contemporaneous buildings, there need be no limit, for it will always be possible to store them, and the larger the collection is the more valuable will it be for purposes of reference. There is hardly a new building now undertaken which is not photographed at the instance of the architect or of the employer, and an understanding might easily be established that it was expected that a photograph of every new construction, possessed of any architectural character, should be deposited in the national collection.

The National Museum of Architecture has hitherto been treated exclusively in its scholastic aspect, but it will possess an exhibitional character as the central place of deposit for the many valuable fragments which are let loose by excavation, demolition, restoration, sale, or gift. It would, however be a great mistake to make the admission of such antiquities too easy, as such a course might lead to the wholesale mutilation or destruction of monuments which would otherwise have been preserved intact or placed in durable repair. Worst of all the opening of such asylum might tend to the encouragement of that destructive system of restoration which has become so fashionable in France, and which consists in refabricating every portion of every ancient building which has been in the least degree disintegrated by time and weather. If there were a national museum open to receive the original pieces, a strong temptation would be thrown into the way of our own restorers to commit similar enormities. Still, after all these abatements, there are many things which would be either lost or useless unless they were deposited in some central receptacle, and for them a sufficient space ought to be provided in the national collection. As instances of what is meant, may be quoted the Chertsey tiles and Sir Bartle Frere's most interesting series of Hindoo sculptures, both at present in the Architectural Museum.

The management of the future museum is a detail which hardly comes within the scope of this report. It may, however, be assumed that no Board will be either efficient in itself or generally acceptable which does not include a large proportion of professional and amateur capacity named on some principle which shall give due representation to educated public opinion. Any importation of bureaucracy would be fatal to the popularity and usefulness of the institution.

As to the *locale* of the National Museum of Architecture, it cannot be too strongly urged that its position in London ought to be central, rather than suburban. Utility and popularity alike combine in favour of this recommendation; moreover, it is highly to be desired that the character of the building should be such as to correspond with and to enhance the teachings of beauty, which the collection is intended to enforce. The consignment of England's collected masterpieces of architectural art to any structure which ill-concealed poverty of design and ignorance of proportion by a superfluity of misapplied ornrment, would involve a practical contradiction, alike discreditable to our national character and detrimental to our architectural progress.

SOUTH AUSTRALIAN WINES.

The following is extracted from the *South Australian Register*:—

It has been known for some time past that large quantities of the wines produced here were being shipped to Victoria, and were taking a high position in the Melbourne market; but, except to a few persons interested in the trade, it was not known that the business had assumed such large dimensions. It had been supposed by many that our produce hitherto has not been much greater than was necessary for our own consumption; and yet it appears from an article in the *Argus* that by far the largest portion of Australian wines imported by our neighbours comes from this colony. The taste for these wines is growing, and there can be but little doubt that for some time to come there will be a market in Melbourne for as much as we can send them. The writer says:—"In New South Wales they produce so little, or else are so fond of what they have got, that but little finds its way into this market. Not so with South Australia, whose wines come here in large quantities, and are in deserved high flavour. Messrs. Ritchie and Farrington, who perhaps stand at the head of the colonial wine trade in Victoria, give an estimate of the relative demand for colonial wines, taking the lowest as 1, as follows:—South Australian:—White—Erlana, 4; Verdeilho, 5; Pedro Ximenes, 1; Malvasia, 2; Muscatella, 3; Hock, 1; Riesling, 3. Red wines—Hermitage, 6; Richebourg, 3; Constantia, 2." Our best wines are placed much higher by these experienced merchants, and are in larger demand than those of either New South Wales or Victoria, and we hope our winegrowers will do their best to maintain the good character which they have already obtained. So high is the value of colonial wines in Victoria that unscrupulous persons are actually buying up low-priced and inferior German wines, and, by a kind of doctoring which they know how to perform, are working them up into a semblance of Australian wine. This is a fact much to be regretted, because the character of our pure and nutritious wines will in all probability suffer if inferior stuff, charged with drugs and fortified with strong spirit, is put into the market and sold as colonial wine.

According to the *Argus*, South Australian wines realise in Melbourne from 20s. to 25s. a dozen, in addition to the duty of 3s. a gallon which they must pay. This is a fair price, and one which ought to be highly remunerative to the producer. Of course it is the better class of wines which obtain this price. Others, we are told, are often invoiced in the wood at 2s. 6d. a gallon without the duty. We question this latter statement. A very small portion, we should think, at this price ever leaves the colony of South Australia. It must be wine which, from its inferior quality, is utterly unsaleable here, and which the people in this land would hardly accept as a gift. The humblest harvest wines would bring a better price than this. There can be no doubt that much wretched stuff has been made in South Australia. In the case of many persons the manufacture has been tentative and experimental, and much good fruit has been converted into bad wine; this is the price which has been paid in acquiring the art of winemaking. It is possible that the results of some of these experiments may have found their way to Melbourne at 2s. 6d. a gallon; but we think we may very confidently assert that no samples which would be drunk here would be exported at such a price.

The most mischievous restriction to the sale of South Australian wine in the Melbourne market is that which arises from the Customs duty of 3s. a gallon. We hope the Conference may have agreed upon some scheme which will admit colonial productions to all the colonies free of duty. From the high character which our wines have taken, and which, from the enlarged experience of our vignerons, we have no doubt they will be able to maintain, there is no reason why we should not command the Melbourne market for many years to come. We have been assured on good authority that certain qualities of South Australian wines would, if supplied regularly and in sufficient quantities, very fairly compete with those of European production. It is something, in drinking wine, to know that it is what it professes to be—the pure juice of the grape; and we believe that, with respect to the great bulk of the wine produced in this colony, this confidence is warranted. It would be a great pity if, for the sake of assimilating them either in strength or taste to the wines of Europe, our winemakers were to resort to fortifying or doctoring their productions. They have a character of their own by which their value will be tested and determined. It would be as absurd for the manufacturers of French claret by a kind of doctoring to work that delicious wine into a bad imitation of old Port as for our vignerons to destroy the distinctive character of South Australian wines, to adapt them to the taste of those who have been accustomed to the heavy-bodied productions of Spain and Portugal. That the lighter wines will commend themselves to the taste of the great majority of Englishmen we have but little doubt. Indeed, the heavy brandied wines of the south-west of Europe have become popular in England only in late years. Every person acquainted with the social life and habits of the wine-drinking people of Great Britain before the commencement of the present century must know that the wines of France were chiefly used. When Mr. Gladstone introduced his budget to the English House of Commons—the chief point in which was the reduction of the duties on French wines—he gave several interesting and conclusive illustrations of this fact; and he maintained that the taste for full-bodied wines was a modern and an acquired taste. And the success which has attended the introduction of French wines to the English market proves that the sagacious Chancellor was right. Now we have every reason to believe that in South Australia we can produce wines in all respects equal, and in some respects superior, to those of France. Let our first-class vignerons have faith in the wines they make pure and simple, and carefully eschew all tampering with them and doctoring them, and let them sell them at as moderate a price as they can afford until the taste for them be firmly established, when they will become a necessity, and then we have no doubt they will be able to command highly remunerative prices. It is as certain as anything can be that the manufacture of wine will become one of the chief articles of South Australian produce. Taking the colony throughout, there is no description of grapes which cannot be grown, and with all the advantages we possess we cannot fail to become a large wine-producing colony.

GAS FROM CANNEL AND FROM COAL.

The following analysis of the comparative value of gas made from coals and cannel is by Dr. Andrew Fife, Professor of Chemistry, King's College, Aberdeen:—

A ton of English caking coal yields, on an average, at gas-works, 8,000 feet of gas; and though a larger quantity was given with my apparatus, yet we must take 8,000 as the quantity on a large scale. The value of the coal is taken as 1.

The Wigan cannel yielded 9,500 and 11,500; the value of the gas, bulk for bulk, being the same, viz., 1·85 to the former as 1. Now, taking into account the quantity of gas afforded, the value of the coals for yielding light, by the consumption of their gases, is as 2·23 for the one quantity, and ·25 for the other. Taking the average, we state the value of English cannel coal as 2·35, or say 2¼ to Newcastle coal as 1.

The following analysis of the cannel raised by the Ince Hall Coal and Cannel Company, is by Mr. John Leigh, M.R.C.I., Consulting Chemist to the Manchester Corporation Gas Works:—

Carbonic oxide and aqueous vapour ...	1·53	
Olefiant gas and divers hydro-carbons ...	8·50	
Atmospheric air	4·32	
Nitrogen	0·19	
Hydrogen	40·30	
Light carburetted hydrogen	33·83	
Carbonic acid	11·35	
		100·02

Quantity of gas produced	11·673 cubic feet.
Specific gravity of gas	5·20 „
Coke produced from 1 ton of cannel,	13 cwt. 0 qrs. 13 lbs.

This cannel is used by the chief gas-works of this country, including London, Liverpool, Manchester, and Birmingham; and by the principal foreign gas-works, both on the Continent and in North and South America.

The analysis of the same Company's gas coal, made by Mr. J. E. Clift, Engineer to the Pagoda Gas-works, Birmingham, gives:—

Carbon, from 100 parts	84·50	
Hydrogen, „	5·14	
Oxygen, „	2·10	
Nitrogen, „	2·20	
Sulphur, „	0·33	
Ash, „	4·12	
		98·39
Loss		1·61
		100·00

Products obtained from one ton of gas coal, being the average results obtained from using 300 tons in making gas:—

Gas produced, 10,200 cubic feet; illuminating power—one Argand burner consuming five feet per hour—thirteen spermaceti candles of six to the pound; specific gravity, 462; atmospheric air being 1·00. Coke produced, 13 cwt. 3 qrs., or 44 imperial bushels; suitable for iron-founders, brassfounders, and maltsters. Ammoniacal liquor produced, 20 gallons; 1 gallon requiring 10 oz. of the sulphuric acid of commerce to saturate it. Tar produced, 10 gallons.

Purification of the gas:—1,000 cubic feet of gas requires 12½ lbs. of lime for its purification, which shows it to be comparatively very free from sulphur.

The other impurities of coal gas are not more abundant than in that made from other coals.

A further analysis of the same Company's gas coal, made by Professor Thompson, of London, gives:—

Specific gravity	1·270
Coke, per cent.	65·2
Volatile matter, per cent.	34·8
Cubic feet of gas, per ton, gross	11,400
„ „ „ purified ...	11,200
Impurity per cent. in gas	1·8
Specific gravity of purified gas	406·
Illuminating matter condensible by bromine, per cent.	4·25
Carbonic oxide in purified gas, per cent. ...	4·

Illuminating power of the gas, burnt at 5 feet per hour, equal to 13·8 spermaceti candles, each consuming 120 grains per hour.

Heating power of the coal:—1 lb. will convert 15½ lbs. of boiling water into steam.

CONSUMPTION OF WINE.

The following Table shows the proportionate consumption per cent. of each description of wine during the years 1860, 1861, 1862 :—

WINE. In Imperial Gallons.	HOME CONSUMPTION.		
	1860.	1861.	1862.
From the Cape and other British Possessions	427,698	340,082	182,282
„ Holland . .	222,725	345,647	316,440
„ France . . .	1,125,599	2,227,662	1,900,344
„ Portugal . .	1,776,138	2,702,649	2,349,954
„ Madeira . .	28,942	28,749	28,550
„ Spain . . .	2,975,769	4,032,274	3,956,213
„ Canaries . .	4,070	3,757	3,356
„ Naples and Sicily .	205,084	227,513	214,125
„ Other Countries .	315,158	448,723	466,742
Various Countries, including Wines mixed in Bond . . .	277,009	430,115	385,040

WINE. In Imperial Gallons.	PROPORTIONATE CONSUMPTION PER CENT.		
	1860.	1861.	1862.
From the Cape and other British Possessions . . .	5·81	3·15	1·86
„ Holland	3·02	3·20	3·22
„ France	15·29	20·65	19·38
„ Portugal	24·13	25·05	23·97
„ Madeira	0·39	0·27	0·29
„ Spain	40·44	37·38	40·35
„ Canaries	0·05	0·03	0·03
„ Naples and Sicily . . .	2·78	2·10	2·18
„ Other Countries . . .	4·28	4·15	4·76
Various Conntries, including Wines mixed in Bond	3·76	3·99	3·92

OILING WOOL BY MACHINERY.

In order to render wool more workable than it is in its native state, it is customary to oil it, a process which has the effect of causing the fibres to slip more readily and evenly, and ensure more perfect cording and regular yarn. Hitherto the oil has been distributed by hand from a syringe, watering-can, or similar instrument; and the result has been that the oil has been diffused very irregularly, in some places the wool being saturated and clotted, and in others escaping altogether. This inequality in the oiling of the wool produces similar inequalities in the yarn, and the defects of the process are discernible in the various stages of manufacture. Mr. Leach, of the firm of Messrs. Littles, Leach, and Co., Britannia Mills, Leeds, has put forward a plan for obviating this difficulty. The invention has the advantage of being readily attached to willies, teazers, pluckers, burring, and other machines employed in the manufacture of wool, and is so constructed that it can distribute oil to any given extent, the machine measuring and distributing the liquid with considerable accuracy. As the wool passes along the feed-sheet of the preparing machine, the oil is, by means of the apparatus, scattered over it in the form of a spray or mist, so that the wool is thoroughly oiled, a fact which could be detected by feeling the wool; but the oil, having been so evenly and accurately distributed, was not perceptible to the eye. The quantity of oil can be varied at pleasure, and, by a simple arrangement, it can be conveyed to the machine in pipes from the cask or cistern, thus saving much labour and preventing waste.

MARYLEBONE AND WEST LONDON SCHOOL OF ART.

On Tuesday evening, the 14th July, the first annual distribution of medals and prizes amongst the students of this young yet highly successful institution took place at the Court House, Marylebone-lane. The meeting was presided over by Mr. A. J. B. Beresford Hope, who was supported by the Lord Bishop of Chichester, Mr. Harvey Lewis, M.P., the Rev. C. J. P. Eyre (rector of St. Marylebone), Mr. Peter Graham, Mr. Hepworth Dixon, Mr. Godwin, Mr. J. A. Nicholay, Dr. Marshall, Mr. S. M. Hubert, Mr. G. Phillips, Mr. W. C. Cocks, Mr. Lomax, Mr. Little, Mr. Burchett (head master, South Kensington), Mr. Collinson and Mr. Hagreen (masters of painting and architectural schools, South Kensington), Mr. Mackonald Clarke (master of the school), and others.

In opening the proceedings, the Chairman said it afforded him peculiar gratification to be enabled to preside at this inauguration, the first public assembly of the school of art, which had been so successfully founded by the untiring exertions of a few private citizens, of whom they might well be proud. He need not dwell upon the desirability of art; it was the breath, the life of the world. There were form, colour, and material in everything; and as they constituted art, so art was a necessary pre-existing accompaniment of civilisation. Two years ago this school was begun in a very humble way; and, under its indefatigable master, Mr. Clarke, it had gone on increasing till it had out-grown the infant school in which it used to assemble; and those who were then there would well remember how they worked against time and tide and circumstances, through pure enthusiasm for their vocation. Institutions of this kind required both a poetic, enthusiastic mind, and an active practical mind, to give them life and that tangible support wanted when the flame of enthusiasm had burned itself out, which it sometimes did for want of fuel. When the institution commenced, it received the support of Mr. Hubert, Mr. Jackson, of Rathbone-place, Mr. Phillips, Mr. Morant, and Mr. Peter Graham, to the last of whom the school should be especially grateful for the kind assistance he had afforded it, and who, when their tenure of the premises in Wells-street had expired, with a public, munificent spirit, put himself in the way of becoming lessee of the admirable premises in Portland-place, where the school was now situate, and interposed himself between it and the rent-collector, tax-gatherer, and others, that hovered around such institutions; and thus he enabled its promoters to carry out their good designs in the cause of art. Now the school had these excellent premises well fitted, well lighted, well conducted. As far as the teaching expenses went the school was self-supporting, but there were rent and taxes, for which the public should hold them harmless; and it was also desirable there should be something further in the shape of extra prizes, extra specimens, extra treats for the pupils, which might be contributed to openheartedly and with open hand, and of which he hoped the school would not be deprived, and to which he believed it had a just claim. In May, 1862, when the school was but a baby in swaddling-clothes, toddling alone in Wells-street, the number of pupils was 59, which increased in June to 65, and in July to 72. There were 112 in October, 134 in November, and 126 in December. In January, 1863, the school numbered 118, and got up to 125 in February. In March the number came down to 100, and in April to 90; and the first complete month it was in its new place, the pupils shot up from 90 to 140, the monthly average for the first year being about 100. In the examinations of the department of science and art, they had been very successful. There were ninety odd schools in England, to whom eighty medals were given to be competed for. The natural average distribution would therefore, be eight-ninths of a medal to each school. Instead of this school gaining the average, it had gained two medals out of eighty,—more than twice the average. If they were wise, this would make them determined to do more this year; if foolish, make them fall back in false security on their present success. They could hardly overrate the desirability of an art-education to the handicraftsmen of this country, who should be ministers of art to the rest of the community. He did not mean to say they should have an education which puffed them up, and led them to think a few years in an art-school was to set them up above great master painters and sculptors of past ages. If so, he would retract all he had said in favour of art-schools. But he did not believe such would be the case. Handicraftsmen should be taught to be working artists—art workmen—intelligent producers of the ideas set before them. By an analysis of the school in December last, it was found that out of 223 pupils, there were 23 carvers, 23 teachers, 16 upholsterers, 16 carpenters and joiners, 15 jewellers, 14 decorators, 14 clerks, 15 cabinet-makers, 12 glass-painters, 12 chasers and die-sinkers, 11 engineers, 10 metal workers, 13 miscellaneous, 13 at school. He looked upon this great art-movement as a very important social movement as concerned the body politic, as it tended to unite classes together.

The Chairman then read the names of the "passed" students at the second-grade examination, and also the names of those who obtained prizes at that examination. The prizes were handed the winners by the chairman, who congratulated them on the honour which their success conferred alike on themselves and the institution.

Mr. Sparrow then rose, and, on the part of himself and fellow-students, presented Mr. Clarke with a handsome clock, in a marble case, with bronze statuette, as a mark of the esteem with which they regarded him, and as an acknowledgment of his efforts to promote the cause of art, to which Mr. Clarke responded.

The Lord Bishop of Chichester then addressed the meeting, and he hoped, as this was only an early stage of the school, that it would become better known each year of its existence by such an agreeable meeting as this. Nothing had been more gratifying to his feelings than to see the unselfish, generous sympathy and interest manifested by the students in the success of individuals. He had not been aware of the existence of the school, until he was lately informed of it; but he should try to do what he could in his humble way to forward its progress; as he believed that, next to the great influences of religion and morality, nothing tended more to elevate the human character than the study of the beautiful harmonies of art.

Mr. Harvey Lewis, M.P., said he felt some difficulty in speaking on the subject of art, after their patron, who had devoted so much energy, time, and money to foster the idea of art, and advance its study, as one of the most humanising and intellectual pursuits to which man could devote himself. He considered that the fact of the scholars having obtained two national medallions for eight months' work was most encouraging, and would induce the pupils to put forth all their energies to do still better in the future. Those who had visited the two Great Exhibitions of science and art which had taken place in this country, must have been struck with the vast improvement that had taken place since 1851, even in the minutest articles of domestic use; showing that articles could be produced which would delight the taste and refine the mind. Such things were not only a daily pleasure, but they also had to do with commercial prosperity. Vast numbers of foreigners were in the habit of flocking to Paris to make purchases, because they believed they would find taste there better than elsewhere. But if they took the trouble to look for it, they could find better taste in London combined with greater excellence of workmanship. If, by strict attention to the rules of art, by losing no opportunities of applying the rules of art in the various branches of industrial occupation, they could convince the world that high art could be found here as much as in Paris, then would they confer not only a benefit on themselves but also one on their country at large. Not long ago, an action had been tried at Paris, where some calico goods had been printed from a French design, and damages recovered. This showed that we ought not to copy but to originate design ourselves, instead of passively adopting the ideas of others. He would earnestly impress upon the students present to turn their natural abilities to their best use, and lay a good foundation by a proper course of instruction.

Mr. Godwin, F.R.S. said he was well satisfied with the aspect and prospects of the schools; but when he looked around the room, knowing as he did what the borough of Marylebone was, he felt the present meeting to be a positive disgrace to it, when he saw there so few of those in the borough who ought to have given their personal attendance. All should have the power of depicting what they saw. He that could learn to write could learn to draw. Thus would power be gained—art-power, and money-power too. A workman who could draw would become a foreman, and might soon become a master. During the last ten years industrial art had made great strides in England, as was shown by the accounts the French reporters had given; whilst in France they had remained stationary; and they now talked of establishing there a department of art similar to that at South Kensington. Nevertheless thousands and thousands of pounds were sent out of England every year for the purchase of patterns. A considerable portion of the designs carried out by our manufacturers were French in spirit; but if our Government had been true to art, we should now have the world coming to us for designs. This might yet be. He begged leave to propose a vote of thanks to Mr. Beresford Hope, whose activity in the cause of art was quite remarkable.

The Rev. C. J. P. Eyre said, he approved highly of the object of the school, as tending to advance men morally, socially, and politically; and felt sure no step could be taken better calculated to do so. He should be happy to give any assistance he could to the school, and was certain his parishioners would liberally respond to its wants. He was glad to hear they were looking to the public only for rent and taxes. He was glad that the institution, embracing as it did the working classes, was made dependent on their own efforts. He hoped the intelligence of the working classes of Marylebone would insure its support, with the exception of what they might be allowed to contribute in the shape of rent. He was very glad this was established; because, in addition to the rational and improving amusement provided, it had a tendency to elevate the moral feelings. He seconded the resolution, which was passed with acclamation.

Mr. Hope, in acknowledging the compliment, said when the great standard of English industrial art was raised, it was done by his father, the late Thomas Hope, when he resided in the parish. In the parish, too, he (the chairman) was born; and therefore he felt as if, in some measure, he sat there by hereditary right.

Mr. Peter Graham then proposed a vote of thanks for the Vestry Hall, which Mr. Cole seconded, and which was carried unanimously. Mr. Graham was himself most warmly received.

Mr. Hubert expressed the very great obligations the committee of the school lay under to Mr Graham for coming forward to assist them at a time when they otherwise must have appealed to the public for a contribution to erect the building; and proposed a vote of thanks should be given to him.

Mr. Hepworth Dixon seconded this, and stated that it was not until Mr. Hope told him that he was aware of the existence of this institution. He had no doubt that when it was known, men of art, men of science, and the public would come forward to render any assistance that might be asked at their hands, and enable them to go on prospering. If he might be allowed a few words to the students, he would say—there are two conditions on which you will do the great work you have commenced, and on which you will get the assistance I half dare to promise you in the name of my fellow-parishioners. First, by being determined to work; that is the first great element of success in this world. There is a sort of ideal theory that men of genius need not work. Throw that fallacy aside the very first moment you take pen or pencil in hand. The men of genius are those that do the most work. He then instanced Bacon, Shakspere, Michael-Angelo, in support of this truth. The other condition he urged was, that the work should be done in the humble, teachable spirit in which good men and true worked.

Mr. Graham briefly responded to the compliment, and the meeting then separated.

EXAMINATION PAPERS, 1863.

The following are the Examination Papers set in the various subjects at the Society's Final Examinations, held in May last:—

(Continued from page 620.)

AGRICULTURE.

THREE HOURS ALLOWED.

1. What is the arable farmer likely to be engaged in during the month of October in the Southern counties.
2. What advantages may be expected from steam cultivation as compared with cultivation by horse labour.
3. Describe the home manufacture of "Superphosphate."
4. What, and how much per acre, are the dressings of the different manures usually given to ordinary arable crops under liberal management.
5. To what may the fertilising effects of irrigation be attributed.
6. What explanations have been given of the so-called clover sickness.
7. What crops and what extent of each would you grow on 600 acres of stiff clay land; and in what order would they follow each other.
8. Describe the cultivation of (*a*) Barley and of (*b*) *Trifolium incarnatum*—naming the soil preferred by each, its proper place in the rotation, the previous cultivation needed, and probable produce under favourable circumstances.
9. What is the annual food of a well-kept farm horse, month by month?—estimate its cost.
10. What extent of the several kinds of cropping must be grown upon a light land farm, and what quantity, and kinds, and cost of other food must be provided, for a flock of 100 Hampshire down ewes bought in August, kept throughout the year for early lamb, and fattened with their produce, to be all sold within 12 months.
11. What is the probable winter's food of a bullock coming three years old, and then fattening to 8 cwt. during the last four months of the process; estimate its cost per week.
12. What period do the mare, the cow, the ewe, the sow, respectively go with young.

MINING AND METALLURGY.

THREE HOURS ALLOWED.

Six Questions to be answered.

1. Describe the Castillian Furnace employed for the treatment of lead ores of low produce.
2. Which are the principal ores of zinc, and on what principle is their metallurgic treatment conducted?
3. In what way is coke manufactured from small coal?
4. How is an assay of galena for lead and silver most advantageously performed?
5. What do you understand by the terms, "Stope," "Winze," and "Level," as applied to metallic mining?
6. Give the process of smelting iron ores by the hot blast.
7. Describe in outline the process employed in this country for the conversion of cast iron into malleable iron.
8. For what purpose is antimony chiefly used, and how is this metal obtained from its ores?
9. Describe the Davy Lamp.
10. What is the difference between working coal by "long wall" and "pillar and stall?"
11. Give the method of determining the duty of an ordinary Cornish pumping engine.
12. What will be the mean produce of three piles of copper ore:—The first being 40 tons, assaying 8 per cent.; the second, 60 tons, assaying 7¾ per cent.; and the third, 31½ tons, assaying 6⅜ per cent.?

POLITICAL AND SOCIAL ECONOMY.

THREE HOURS ALLOWED.

It is desirable that the first series of questions be answered. The second series are optional.)

I.

1. State Professor Jones's threefold division of labourers, the different funds from which each division is paid, and the different proportions in which they exist in different parts of the world.
2. What is the effect of absenteeism upon wages?
3. What were the economical effects of emancipation on the British colonies—more especially on British Guiana?
4. Give a sketch of the history of the Excise, and explain the principles upon which it rests. State its most important branches, and their present productiveness? With what taxes is it now classed, and under what head of revenue?

II.

1. Explain the origin of tenant-right in Ireland, and the questions involved in the present assertion of that right.
2. State the principles which regulate the course of exchange between two countries, and illustrate them by the present state of the exchanges with America.
3. Give the substance of Mr. Mill's account of peasant proprietors.

DOMESTIC ECONOMY.

THREE HOURS ALLOWED.

1. Explain what you understand by domestic economy, and enumerate under different heads what you think it embraces.
2. What considerations should influence one in choosing a residence, and what are the evils which arise from sitting and sleeping in ill-ventilated apartments?
3. How would you regulate the diet and clothing of a family, having reference to their occupation in life, health, and economy?
4. Enumerate some of the simplest household arrangements most important for the preservation of health.
5. What are the comparative prices of tea, coffee, and cocoa, and which is the most nutritious and economical as an article of daily consumption?
6. Give directions for making cheap and nutritious soups.
7. What qualifications should characterise a good servant as cook or housemaid, and what qualifications in a mistress would best tend to develop them?
8. Give directions for the management of a dairy, a poultry-yard, and a laundry.
9. What are the leading principles of good management in the mother of a family in the labouring classes?
10. Enumerate the advantages of a garden to a labouring man with a family, and the useful things which may be taught to his children by the skilful cultivation of it.

11. What are the properties of the potatoe which give it the advantage over other vegetables, and what garden vegetables do you consider most nutritious?

12. Explain what you consider to be the best way of laying up small weekly savings to the greatest advantage, so as to be useful when wanted, and state your reasons.

13. How is the health, happiness, and morality of the working man and his family affected by the circumstance of his having a commodious and fitting cottage to live in?

14. What do you consider the most fitting education for the children of the labouring classes up to 12 or 13 years of age? and how are their prospects in life affected by it?

GEOGRAPHY.

THREE HOURS ALLOWED.

1. Draw from memory a rough map of some part of the British islands—either a county, a river-basin, or any tract inclusive of one of the great seats of manufacturing industry. Mark on it the places of the principal towns.

2. Give the names of the principal towns that are within the cotton-manufacturing district of England, and specify with precision the situation of each.

3. Name any six of the English counties that are chiefly distinguished as agricultural counties; also any six that are principally manufacturing. Mention one or more towns in each.

4. Enumerate the principal coal-fields of Great Britain and Ireland, with some of the towns that fall within their limits?

5. Name the rivers of Scotland, in order of geographical succession round the coast; also six of the principal lakes.

6. Name the river on which each of the following is situated:—Leeds, York, Shrewsbury, Ely, Hereford, Winchester, Glasgow, Perth, Carlisle, Maidstone, Cork, and Waterford. Also the county to which each belongs.

7. Give the names of the Australian colonies, with their capitals; state also, in reference to each, the distinguishing conditions of its produce and industry.

8. Name the British colonies in North America, with the capital of each. State in what their exports chiefly consist.

9. Draw a rough map of France, showing the river-basins, mountain-ranges, and chief towns.

10. Write a short account of the geography of the modern kingdom of Greece.

11. Describe any one of the under-named rivers, stating (in round numbers) its length in miles, general character of basin, names of principal affluents, and nature of outlet.

(*a*) The Volga.
(*b*) The Mississippi.
(*c*) The Ganges.

12. Say briefly what you know concerning the trade-winds and the monsoons, distinguishing particularly the regions in which they prevail.

13. Account for the fact that the direction of Isothermal Lines often deviates widely from that of parallels of latitude. In which of the zones is the deviation greatest?

14. Give some instances of the altered distribution of vegetable and animal life due to the agency of man, in reference particularly to the plants and animals originally confined to either hemisphere, and now distributed over both the old and the new worlds.

15. State some of the distinguishing conditions (as to outward appearance, habits, &c.) of the following families of mankind:—The Negro, the Hottentot, the Malay, the native Australian, and the New Zealander.

(*To be continued.*)

Proceedings of Institutions.

Darlington Mechanics' Institution.—The last report of the year 1862 says that during the past year it has been the endeavour of the committee to maintain and increase the efficiency of the institution in its various departments, so far as the interest shown by the members has supported them, and the funds at their disposal would permit. 47 new books have been added to the library and the committee have ordered the replacement of 56 worn out-volumes, which will be done forthwith. Others have been kindly presented. The library now contains upwards of 3,000 volumes, and the issues for the year have been 8,276. The reading-room continues to be well supplied with newspapers and periodicals. The lectures delivered on behalf of the institution have been as follows, viz:—Egypt to Sinai, by Arthur Pease, Esq.; William Cobbett, by George Dawson, Esq.; Electricity, by Professor Wheeler; Instinct and Reason in Animals, by Professor Wheeler; Life and Poetry of Cowper, by Dr. Pollock; Modern Music, by Mr. P. Morris; How to get on in the World, by Mr. J. De Fraine; My Scrap Book, by Mr. J. De Fraine; American War and Slavery, by Rev. M. Miller. During the latter part of the winter, readings of an instructive and entertaining character have been given on the Saturday evenings, and the committee return their thanks to the gentlemen who assisted in this effort. The committee made arrangements for the holding of both elementary and French classes, which they regret to state were not carried out, on account of the little disposition shown on the part of the members to avail themselves of these opportunities for self-improvement. The number of members shows a slight decrease as compared with last year. The present number is 373, of which three are life members, 56 news-room, 106 yearly; 208 half-yearly and quarterly. The number entered on the books has been 482. The necessity of enlarging the reading-room, and other improvements in the premises, has been from time to time before the committee, but unexpected difficulties in the completion of the purchase of the adjoining land prevented any progress in building being make; these difficulties are now removed, and the committee would recommend to their successors that the alterations should be immediately proceeded with, and would ask the friends once more to aid them in increasing their present building fund. The statement of receipts and expenditure, and the abstract of the accounts of the penny savings bank, notwithstanding the opening of the post office savings bank, again show an increase in the balance in the hands of the treasurer, and in the number of working accounts; so favourable a result must to no small extent be attributed to the assiduous and able exertion of the managers. The statement of accounts of the institution shows that the receipts have been £186 10s. 2d., and that there is a balance in the treasurer's hands, on general account of £34 19s. 4d., and on account of the building fund of £121 13s. The penny savings bank deposit account is as follows:—

	£ s. d.	£ s. d.	£ s. d.
By amount due to depositors at 22nd February, 1862 ...		733 19 3	
,, amount received during the year	597 12 9		
,, less amount paid ...	569 12 9		
		28 0 0	
			761 19 3
INTEREST ACCOUNT.			
,, Amount received from J. Backhouse and Co.			22 16 0
			784 25 4

The total number of transactions during the year has been 7,176, viz., 6,494 sums received, and 682 sums paid; or an average of 138 weekly. The number of new accounts opened during the year has been 343, making a total of 2,820 accounts opened in six years since the commencement of the bank. The number of accounts having balances at 28th February last was 905 (being an increase of 54 since the previous yearly balance), and the average amount to the credit of each depositor 16s. 10d.

PARLIAMENTARY REPORTS.

SESSIONAL PRINTED PAPERS.

Par. Numb.

Delivered on 18th and 20th July, 1863.

246. Bills– Thames Embankment (South Side) (Lords Amendments).
247. „ Prison Ministers (Lords Amendments).
248. „ Sheep and Cattle (Scotland) (Lords Amendments)
249. „ District Parochial Churches (Ireland) (Lords Amendments).
250. „ Colonial Acts Confirmation.
Statistical Abstract for the United Kingdom (1848 to 1862).

Delivered on 21st July, 1863.

391. Factories—Copy of Memorials, &c. (a corrected Copy).
427. Malta and Alexandria Telegraph—Return.
428. House Duty—Return.
444. Oxford University—Paper.
459. Galway, Boston, and New York Mails—Contract (a corrected Copy).
Poland—Correspondence (Part 4).
Abeokuta—Letter from the Reverend H. Venn.

Delivered on 22nd July, 1863.

446. Redundant List (Public Departments)—Return.
448. Kitchen and Refreshment Rooms (House of Commons)—Fourth Report from Committee.
456. China—Return.
462. Army Prize Money—Account.
460. Malt Duty—Report from Committee.
354. Poor Relief (Ireland)—Return.
251. Bills—Clergymen (Colonies).
252. „ Alterations in Judges' Circuits.
253. „ Superannuations (Union Officers).
254. „ Removal of Irish Poor (Lords Amendments)
255. „ Marriages Registration (Ireland) (Lords Amendments).

Delivered on 23rd July, 1863.

348. Steam Vessels—Return.
458. Chamber of London—Annual Accounts.
465. Armstrong Guns—Return.
475. Civil Services—General Abstract of the Grants.
256. Bills—Rum Duty.
257. „ Savings Banks Acts Amendment (Lords Amendments).
258. „ Port Erin Harbour (Isle of Man) (Lords Amendments).
259. „ Drainage and Improvement of Land (Ireland) Lords Amendments.

Delivered on 24th July, 1863.

443. Revenue (Ireland)—Accounts.
450. Joint Stock Companies—Return.
455. British Museum—Return.
464. Shipping of Crews (Liverpool)—Return.
471. Superior Courts of Law (Fee Fund)—Paper.
481. Supply and Ways and Means (Session 1863)—Return.
261. Bills—Exhibition Medals.
260. „ Church Building and New Parishes Acts Amendment (as amended by the Select Committee).
262. „ Vaccination (Scotland) (Lords Amendments).
263. „ Stipendiary Magistrates (Lords Amendments).
264. „ Misappropriation by Servants (Lords Amendments).
265. „ Pier and Harbour Orders Confirmation (Lords Amendments).
266. Alkali Works Regulation (Lords Reasons).
West India Mails—Contract.
Census of Ireland for the year 1861, Vol. I. (Area, Population, &c.)—Part I. (County and City of Dublin, County of Kildare, King's County, County of Longford, County of Louth and Borough of Drogheda, and County of Meath).

Delivered on 25th July, 1863.

447. Coinage—Accounts.
461. Vessel *Gibraltar*—Return.
472. Metropolitan Police (Guildhall Entertainment)—Return.
267. Bills—Fisheries (Ireland) (Lords Amendments).
268. „ Nuisances Removal Act (1855) Amendment (Lords Amendments).
269. „ Turnpike Trusts Arrangements (Lords Amendments).
270. „ Pauper Lunatic Asylum (Lords Amendments).
271. „ Waterworks Clauses (Lords Amendments).
272. „ Trustees (Scotland) Act Amendment (Lords Amendments).
273. „ Petty Sessions (Ireland) (Lords Amendments).
274. „ Navy Prize Agents (Lords Amendments).
Royal Academy—Report of Commissioners.
New Zealand (Recent Disturbances)—Further Papers.
Census of Ireland for the Year 1861—Vol. II, (Ages and Education) Part II.
Public General Acts—Caps. 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, and 54.

Delivered on 27th July, 1863.

474. Bankruptcy and Insolvency—Return.
477. Poor Law—Return.
372. East India (Coal Fields)—Report of Dr. M'Clelland.
275. Bills—Charitable Uses (Lords Amendments).
276. „ Companies Clauses (Lords Amendments).
277. „ Railways Clauses (Lords Amendments).
278. „ Telegraphs (Lords Amendments to Commons Amendments).
Poland—Further Correspondence (Part V.)
Census of Ireland for the year 1861, Vol I. (Area, Population, &c.)—Part I. (County of Carlow, County and City of Kilkenny, Queen's County, County of Westmeath, County o Wexford, and County of Wicklow, &c.)

Delivered on 28th July, 1863.

426. Copper, &c.—Return.
484. Ionian Islands (Pensions, &c.)—Return.
485. Ionian Islands (Payment of Contribution)—Return.
297. Pitcairn Islanders (Norfolk Island)—Return.

PATENT LAW AMENDMENT ACT.

APPLICATIONS FOR PATENTS AND PROTECTION ALLOWED.

[*From Gazette, July 31st*, 1863.]

Dated 19th March, 1863.

737. H. O. Haughton, Liverpool—Imp. in machinery for drying and cooling grain and seeds. (A com.)

Dated 21st April, 1863.

992. H. Yeadon, E. Yeadon, and S. Yeadon, Stockport, and J. Yeadon, Leeds—Improved healds for weaving.

Dated 11th June, 1863.

1455. C. L. V. Tenac, Tredegar, Monmouthshire, South Wales—A new or improved daily balance book, with moveable or sliding tickets or slips. (A com.)

Dated 22nd June, 1863.

1561. J. Sainty, Burnham Market, Norfolk—An improved turnip cutter for cutting the last slice.
1563. A. Twaddell, Glasgow—Imp. in sizeing or preparing warps.
1567. L. A. Majolier, Stoke Newington—Imp. in apparatus for carburetting gases. (A com.)
1569. W. Clark, 53, Chancery-lane—Imp. in apparatus for charging air or gases with combustible vapours. (A com.)
1571. W. L. Winans, Dover-street, and T. Winans, Baltimore, U.S.—Imp. in adapting propellers for propelling ocean steam vessels.
1573. W. E. Newton, 66, Chancery-lane—Imp. in printing machinery. (A com.)

Dated 23rd June, 1863.

1575. J. Murray, Glasgow—Imp. in machinery for making chains or chain cables and rings.
1577. J. Ellison and A. Rogerson, Bury—Imp. in slubbing, intermediate and roving frames, in throstles and winding machines used for the manufacture of cotton or other fibrous materials.
1579. S. Robinson, J. Priestley, and J. Foulds, Bradford—Imp. in looms for weaving.
1581. R. A. Brooman, 166, Fleet-street—Imp. in breech-loading arms. (A com.)
1583. W. L. Winans and T. Winans, Dover-street—Imp. in lessening the friction of the rubbing surfaces of the slide valves of engines and of the journals of shafts.
1585. E. Brooks, Birmingham—Imp. in breech-loading fire-arms.
1587. F. Feichtinger, 26, Cumberland-street South, Belgravia—Imp. in the manufacture of paper applicable for hemorrhoidal complaints.

Dated 24th June, 1863.

1589. S. Knowles and R. Hayward, Tottington Mill, near Bury—Imp. in machinery for plaiting and measuring woven fabrics.
1595. T. Skinner, Sheffield—Imp. in the ornamentation of silver, German silver, Britannia metal, electro-plated, or other plated goods.

Dated 25th June, 1863.

1597. A. Ripley, Brook-street, West-square, Lambeth—Imp. in the method and construction of a packing, chiefly applicable to piston-rods, pumps, and such like, and for forming the joints of gas, steam, or water pipes.
1601. J. O. Mathieu, Paris—Imp. in twisting machines, particularly applicable to the manufacture of strings, strands, ropes, or cables.
1607. J. Head and H. Brinsmead, Ipswich—Imp. in machinery applicable to thrashing machines, and for cutting and bruising straw.

Dated 26th June, 1863.

1609. W. Clark, 53, Chancery-lane—Imp. in apparatus for aerating liquids. (A com.)
1611. W. E. Gedge, 11, Wellington-street, Strand—Improved apparatus for placing tyres on wheels, or hooping or ferruling generally while the metal is hot. (A com.)

1613. R. Mushet, Coleford, Gloucestershire—Imp. in the manufacture of iron and steel.

Dated 27th June, 1863.

1617. E. T. Hughes, 123, Chancery-lane—Imp. in couplings for hose pipes, and also in connecting axles to the naves or bosses of wheels. (A com.)

Dated 29th June, 1863.

1621. C. Avery, 39, Craven-street, Strand—Imp. in rotary engines.

Dated 30th June, 1863.

1623. F. J. Duggan, Bristol—Improved methods of connecting lamp chimnies and other glasses or shades with the burners of lamps.
1627. J. H. Johnson, 47, Lincoln's-inn-fields—Imp. in machinery or apparatus for moulding or shaping pottery ware. (A com.)
1629. C. H. Gardner, West Harding-street, Fetter-lane—Imp. in lithographic and zincographic presses.
1631. S. Cole, Moseley, Worcestershire—Imp. in clasps or fastenings for securing brooches, solitaires, and other dress ornaments.

Dated 1st July, 1863.

1633. J. Blake, Accrington—Imp. in apparatus for reducing and regulating the pressure or quantity of steam, and in discharging the water of condensed steam from cylinders, pipes, and other vessels.
1635. W. Snell, 16, Clement's inn, Strand—An improved waterproof material. (A com.)
1637. Capt. C. P. Coles, R.N., Southsea—An improved method of and apparatus for working guns in vessels and forts, and discharging them under water.
1639. J. H. Johnson, 47, Lincoln's-inn-fields—Imp. in coating or covering metal sheets with metals or alloys, and in the apparatus employed therein. (A com.)
1641. T. Taylor, Wandsworth—Imp. in railway breaks.

Dated 2nd July, 1863.

1645. J. J. Shedlock, Vincent-street, Westminster—Imp. in wet gas meters.
1647. A. A. Croll, Coleman-street—Imp. in the preparation of materials to be used in the purification of gas for illumination.

Dated 3rd July, 1863.

1652. C. Martin, Brentford—Imp. in the treatment and preparation of materials for the manufacture of paper.
1655. R. Davison, London-street—Imp. in machinery for decorticating and cleansing corn and other grain. (A com.)
1657. H. Brinsmead, Ipswich—Imp. in cooking apparatus.
1659. H. S. Warner, Trinidad—An improved mode of and apparatus for treating or preparing megass and other substances to be used as fuel.

Dated 4th July, 1863.

1661. J. C. Macdonald, Waddon, near Croydon, Surrey, and J. Calverley, 26, George-street, Peckham—Imp. in the manufacture and application of printing apparatus.
1662. M. E. Eyth, 60, Boulevart de Strasbourg, Paris—An improved rotative engine.
1663. J. McDonald, Ashton-under-Lyne—Certain imp. in Jacquard looms.
1665. J. Grimson, Leicester—Imp. in shuttles for weaving narrow fabrics, and in mounting and fitting them to the battens.
1669. A. Norman, Clarendon-road, Notting-hill—An improved apparatus for fanning or for agitating air.
1671. G. A. Barrett, W. Exall, C. J. Andrewes, and A. Barrett, Reading, and J. L. Bowhay, Modbury, Devonshire—Imp. in the arrangement and construction of fixed and portable combined thrashing machines.

Dated 6th July, 1863.

1674. W. B. Adams, Holly Mount, Hampstead—Imp. in wheels, and their tyres, axles, and axle boxes.

Dated 8th July, 1863.

1696. J. Gibson, 31, Ormond Quay, S. Trulock, R. Trulock and W. Trulock, Essex Quay, Dublin—Imp. in breech-loading fire arms.
1702. W. E. Newton 66, Chancery-lane—Imp. in the construction of locks and fastenings. (A com.)

Dated 13th July, 1863.

1744. H. N. King, 42A, Milsom-street, Bath—An improved mode of and apparatus for producing spectral illusions on the stage.
1750. R. A. Brooman, 166, Fleet-street—Imp. in sizing or gumming warp and weft threads. (A com.)

Dated 15th July, 1863.

1776. C. Clemm, Dresden, Saxony—New employment of magnesia and its combinations in manufactures.

Dated 16th July, 1863.

1780. S. A. Cooper, 5, Lower Chapman street, St. George's East—An improved packing case to contain bottled beer, wine, or any other liquid in bottle.
1786. G. Rand, Stoneham, Hants—Imp. in the means of and apparatus for boiling and cooking.

Dated 17th July, 1863.

1798. E. Alcan, King-street—An imp. in gas burners. (A com.)
1800. G. F. Wilson and G. Payne, Sherwood Works, Battersea—Imp. in the manufacture of soap.

Dated 18th July, 1863.

1806. G. Murdoch, Portsmouth—Imp. in the construction of steam and vacuum gauges.

Dated 20th July, 1863.

1808. W. Simpson and J. Hutton, Northampton—Imp. in the manufacture of hollow cutting tools.
1810. R. B. Brassey and J. Hargreaves, Ashton-under-Lyne—Imp. in machinery or apparatus for sizing and drying yarns and fabrics.
1812. J. Bailey and W. H. Bailey, Albion Works, Salford—Imp. in apparatus for the prevention of boiler explosions.
1814. W. H. Gedge, 11, Wellington-street, Strand—Imp. applicable to inland navigation. (A com.)
1816. F. Ayckbourn, Moreton-street—Imp. in air and water beds, pillows, bolsters, and cushions.
1818. R. Weare, Northwood, Stoke-upon-Trent, Staffordshire—Imp. in water-closets, commodes, slop pails, and other like apparatus or utensils.

Dated 21st July, 1863.

1824. C. S. Duncan, Inverness-road, Bayswater—Imp. in the means of and apparatus for heating, melting, boiling, evaporating, and other useful purposes.
1826. J. E. Varmer, Coleman-street—Imp. in the manufacture of umbrellas and parasols.
1828. R. A. Brooman, 166, Fleet-street—Imp. in watches and other time-keepers. (A com.)
1830. W. Naylor, Queen's-road, Dalston—Imp. in safety valves, and in apparatus connected therewith.

Dated 22nd July, 1863.

1832. P. R. Jackson, Salford—Imp. in machinery for rolling hoops and tyres.
1838. I. Perrin, Birmingham—An improved danger signal to be used on rifle, artillery, and other practising grounds.

Dated 23rd July, 1863.

1844. G. Davies, 1, Serle-street, Lincoln's-inn—An imp. in revolving fire-arms. (A com.)
1848. W. Clark, 53, Chancery-lane—Imp. in saddles. (A com.)

Invention with Complete Specification Filed.

1846. M. Meisel, 14, Park-walk, West Brompton—An improved apparatus for regulating the speed of trains on railways, and in assisting the locomotive engine and train in ascending and descending inclined planes. (A com.)—23rd July, 1863.

Patents Sealed.

[*From Gazette, July 31st*, 1863.]

July 31st.

304. J. Fletcher and H. Bower.
305. A. T. Blakely and J. Vavasseur.
312. T. Bradford.
318. W. T. Weston.
319. B. Russ.
328. R. A. Brooman.
330. R. A. Brooman.
337. R. A. Brooman.
345. G. Turner.
354. B. Dobson and E. Barlow.
366. J. F. Bottom.
385. G. H. Birkbeck.
403. W. Baylis and T. H. Hopwood.
559. W. Clark.
895. F. J. Risse.

[*From Gazette, August 4th*, 1863.]

August 4th.

351. M. Hackforth.
352. G. Redrup.
357. D. Law and J. Downie.
358. J. Goucher.
361. J. Crosby and J. B. Smith.
363. R. Burley.
365. M. Cartwright.
368. A. Corneau.
369. H. Donald.
370. E. T. Hughes.
371. J. Duckworth.
374. R. Saunders.
375. W. Symington.
376. R. A. Brooman.
378. H. Wycherley.
386. S. M. C. Innes.
389. J. F. Spencer.
390. J. Robertson.
489. J. P. F. Datichy.
520. J. Fitter.
643. A. V. Newton.
691. W. West.
1117. R. G. Kent.
1216. L. S. Chichester.
1656. J. Webster.

Patents on which the Stamp Duty of £50 has been Paid.

[*From Gazette, August 4th*, 1863.]

July 29th.

1869. F. H. Trevithick and R. Jones.

July 30th.

1856. J. Goucher.

July 31st.

1980. G. Jeffries.

August 1st.

1874. B. Arnold.
1880. S. S. Skipton.
1895. J. Higgins and T. S. Whitworth.
1896. T. Webb.
1919. J. Fielding, D. Whittaker, and B. Croasdale.

Patents on which the Stamp Duty of £100 has been paid.

[*From Gazette, August 4th*, 1863.]

July 27th.

1793. J. Knowles.

July 31st.

1820. W. Wood and M. Smith.
1988. E. A. Cowper.